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Analysis of Women's Boarding Houses Impact on Environmental Sanitation and PHBS in Kampung Baru, Bandarlampung

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Abstrak

Meningkatnya jumlah rumah kost wanita di Kelurahan Kampung Baru sebagai kawasan sekitar perguruan tinggi menyebabkan meningkatnya aktivitas domestik yang berpotensi menimbulkan permasalahan sanitasi lingkungan, seperti pengelolaan sampah, ketersediaan air bersih, dan kebersihan fasilitas kost. Kondisi sanitasi yang kurang optimal dapat memengaruhi penerapan Perilaku Hidup Bersih dan Sehat (PHBS) penghuni kost. Penelitian sebelumnya lebih banyak mengkaji sanitasi lingkungan atau PHBS secara terpisah, sehingga kajian mengenai hubungan antara rumah kost wanita, sanitasi lingkungan, dan PHBS dalam satu model penelitian masih terbatas. Oleh karena itu, penelitian ini bertujuan menganalisis pengaruh rumah kost wanita terhadap sanitasi lingkungan serta dampaknya terhadap PHBS di Kelurahan Kampung Baru.

Penelitian ini menggunakan pendekatan kuantitatif dengan metode Structural Equation Modeling (SEM) tipe *Reflective–Reflective Higher Order Construct* menggunakan SmartPLS 3.0. Sampel penelitian berjumlah 91 penghuni rumah kost wanita. Data primer diperoleh melalui observasi, wawancara, dan kuesioner skala Likert, sedangkan data sekunder diperoleh dari data jumlah rumah kost dan sumber literatur terkait. Analisis dilakukan melalui uji validitas, reliabilitas, evaluasi model, PLS Algorithm, dan pengujian hipotesis.

Hasil penelitian menunjukkan bahwa rumah kost wanita berpengaruh sangat signifikan terhadap sanitasi lingkungan (t-statistic 10,516; p-value 0,000; f-square 1,077). Sanitasi lingkungan berpengaruh sangat signifikan terhadap PHBS (t-statistic 7,925; p-value 0,000; f-square 0,528), sedangkan rumah kost wanita berpengaruh signifikan terhadap PHBS (t-statistic 2,552; p-value 0,011; f-square 0,089). Nilai R-square sebesar 0,518 dan 0,659 menunjukkan kemampuan model dalam menjelaskan hubungan antarvariabel dengan baik. Penelitian ini menyimpulkan bahwa peningkatan kualitas sanitasi dan pengelolaan rumah kost secara terpadu berperan penting dalam mendorong terbentuknya PHBS yang lebih baik serta menjadi bahan pertimbangan bagi pengelola kost dan pemerintah setempat dalam meningkatkan kualitas lingkungan hunian.

Abstract

The increasing number of women's boarding houses in the Kampung Baru neighbourhood an area surrounding a university has led to a rise in domestic activities that could potentially cause environmental sanitation issues, such as waste management, clean water availability, and the cleanliness of boarding house facilities. Suboptimal sanitation conditions can affect the residents' adoption of Clean and Healthy Living Practices (PHBS). Previous studies have mostly examined environmental sanitation or PHBS separately; consequently, research on the relationship between women's boarding houses, environmental sanitation, and PHBS within a single research model remains limited. Therefore, this study aims to analyze the influence of women's boarding houses on environmental sanitation and their impact on PHBS in Kampung Baru Subdistrict.

Penelitian ini menggunakan pendekatan kuantitatif dengan metode Structural Equation Modeling (SEM) tipe Reflective–Reflective Higher Order Construct menggunakan SmartPLS 3.0. Sampel penelitian berjumlah 91 penghuni rumah kost wanita. Data primer diperoleh melalui observasi, wawancara, dan kuesioner skala Likert, sedangkan data sekunder diperoleh dari data jumlah rumah kost dan sumber literatur terkait. Analisis dilakukan melalui uji validitas, reliabilitas, evaluasi model, PLS Algorithm, dan pengujian hipotesis.

The results of the study indicate that women's boarding houses have a highly significant effect on environmental sanitation (t-statistic 10.516; p-value 0.000; F-square 1.077). Environmental sanitation has a highly significant effect on PHBS (t-statistic 7.925; p-value 0.000; F-square 0.528), while women's boarding houses have a significant effect on HBS (t-statistic 2.552; p-value 0.011; F-square 0.089). The R-squared values of 0.518 and 0.659 indicate that the models effectively explain the relationships among the variables. This study concludes that improving sanitation quality and implementing integrated boarding house management play a crucial role in promoting better PHBS and should serve as a consideration for boarding house managers and local governments in enhancing the quality of the residential environment.

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INTRODUCTION

This study is important because the increasing number of women's boarding houses in Kampung Baru Subdistrict, in tandem with the development of the educational area around the University of Lampung, has led to high levels of resident activity, such as water usage, waste disposal, and the use of shared facilities. If environmental sanitation is not properly managed, these conditions can lead to health problems and degrade the quality of the living environment. Furthermore, research on the relationship between the conditions of women's boarding houses, environmental sanitation, and Clean and Healthy Living Behaviors (PHBS) remains limited, particularly when using analytical models capable of comprehensively examining the relationships among variables.

This study offers both theoretical and practical benefits. Theoretically, this study can contribute to the field of environmental geography by shedding light on the interactions between living conditions, environmental sanitation, and the health behaviors of boarding house residents. Practically, the results of this study can serve as a basis for boarding house owners to improve the quality of facilities and environmental management in their boarding houses. Additionally, the findings can provide input for local governments in formulating policies to improve environmental sanitation and promote the implementation of healthy living practices in boarding house areas, thereby creating a cleaner, healthier, and more comfortable living environment for the community.

Geography is a natural science with a broad scope. Environmental geography is the study of the environment, humans, and their behavior. Environmental sanitation is an effort to maintain environmental cleanliness and public health in order to protect each individual from factors that can cause health problems, both physical and mental, in order to achieve community well-being, (Sekarningrum et al., 2023) In densely populated areas, sanitation challenges often arise due to increased waste generation, inadequate drainage, and residents' lack of attention to hygiene. Poor waste management can produce unpleasant odors, increase the risk of disease, and degrade the overall environmental quality, especially in areas experiencing rapid urban development.

The increasing number of boarding houses in areas surrounding universities has led to high levels of resident activity, which in turn has resulted in increased water consumption, waste production, and use of shared sanitation facilities.

If environmental sanitation is not properly managed, these conditions can affect the quality of the living environment and the implementation of Clean and Healthy Living Practices (PHBS).

According to the Ministry of Health of the Republic of Indonesia, PHBS refers to conscious behaviors individuals engage in to maintain and improve their health. Irviana (2025) study also states that the implementation of PHBS is influenced not only by individual factors but also by environmental support, including the availability of adequate hygiene and sanitation facilities.

Previous studies have primarily examined the factors of knowledge, attitudes, and environmental support regarding PHBS, whereas research that comprehensively analyzes the relationship between the conditions of women's boarding houses, environmental sanitation, and PHBS remains limited. Therefore, this study is important to determine the influence of women's boarding houses on environmental sanitation and its impact on residents' PHBS. The results of this study are expected to serve as a basis for boarding house owners and local governments to improve sanitation quality and create a healthier living environment.

This situation is clearly visible in Kampung Baru sub-district, which has seen an increase in the number of women's boarding houses due to the development of the educational area around the University of Lampung. A boarding house is a type of temporary housing or residence typically rented to people needing a place to stay for a specific period of time, (Saputra, 2023). Boarding houses are temporary accommodations that are usually rented by students or migrant workers because they are affordable and located close to campus or work, (Malelak et al., 2023). Understanding how residents use their homes can help improve the design and quality of housing, including providing good natural lighting, cleanliness, storage space, and amenities that support residents' daily activities, (Overtoom et al., 2022). A boarding house is a type of housing that must be able to provide comfort, health, and safety for its residents through a high-quality indoor environment, such as adequate ventilation, a comfortable temperature, and freedom from unpleasant odors and noise, (Pedersen et al., 2021).

Women's boarding houses have high levels of domestic activity, such as bathing, laundry, and cooking, resulting in large volumes of liquid and solid waste. If sanitation facilities, such as covered trash cans, drains, bathrooms, ventilation, and lighting, are not properly managed, the boarding house will no longer meet healthy housing standards.

Table 1. Distance and Level of Elevation of Settlements on the Railway Line in Labuhan Ratu District

Distance Railway Borders (According to Law No. 23 of 2007)	Distance from Residential Areas to the Railway Line in Labuhan Ratu District	Height Level of Residential Areas to the Railway Line in Labuhan Ratu District
6 meters	3 – 5 meters	5 – 10 meters
	3 meters	3 – 5 meters
	3 meters	2.5 – 5 meters
	3 – 5 meters	0 meters

Source:(Wahyuningsih et al., 2023).

Residential areas tend to be densely populated, with buildings that are not always well-maintained, some of which are built on land owned by PT KAI without official permits. Environmental facilities such as drainage, waste disposal, and street lighting are still limited, resulting in poor environmental hygiene, (Wahyuningsih et al., 2023).

Women's boarding houses located in densely populated areas near railroad tracks such as in Labuhan Ratu District are closely linked to environmental sanitation conditions. The buildings' proximity to the railroad tracks, high housing density, and limited environmental facilities such as drainage, waste management, and street lighting can reduce sanitation quality around the boarding houses. These conditions have the potential to affect the comfort, health, and practice of Clean and Healthy Living Behaviors (PHBS) among female boarding house residents, as an unclean environment and inadequate sanitation facilities can increase the risk of various health problems. Therefore, the existence of women's boarding houses needs to be supported by proper environmental sanitation management to create a healthy and decent living environment.

Meanwhile, according to WHO, a home is a shelter that supports the physical, mental and social health of its occupants, (Rosalina et al., 2023). According to the American Public Health Association (APHA), a healthy home should meet physical needs such as light, air, space, and freedom from noise; psychological needs such as privacy and communication between residents; and prevent the spread of disease with clean water, good sanitation, freedom from pests, and sufficient sunlight, (Mustamin et al., 2023). Clean and Healthy Living Behavior (PHBS) is an important part of increasing public awareness and thus empowering people who are self-motivated, aware, motivated and proactive in the field of health, (Tanjung et al., 2023).

Clean and healthy lifestyle behaviors are influenced not only by an individual's knowledge of health, but also by the process of attitude and behavior formation within the community, (Saparuddin et al., 2026).

Environmental sanitation involves efforts to create healthy living conditions through the management of air quality, ventilation, humidity, and environmental cleanliness. Good sanitation can reduce the risk of disease and improve people's quality of life, while poor sanitation has the potential to cause various health problems, (Haddad et al., 2022).

The quality of the living environment particularly the availability of basic infrastructure such as clean water, sanitation, and health facilities is a key factor influencing residents' quality of life, (Santana & Maues, 2022). Environmental cleanliness is one of the main factors for maintaining a clean, healthy and comfortable life, (Pohan & Rialdy, 2023). Lack of awareness and supervision has allowed this habit to continue and become one of the main sanitation problems in Kampung Baru Subdistrict, (Natamiharja et al., 2022).

Table 2. Data on the Number of Women's Boarding Houses in Kampung Baru Subdistrict

LK	RT	Women's Boarding House
I	1	5
	2	6
	3	2
	4	22
	5	12
II	1	6
	2	10
	3	2
	4	1
	5	1
Total number		**67**

Source: Observation, 2025

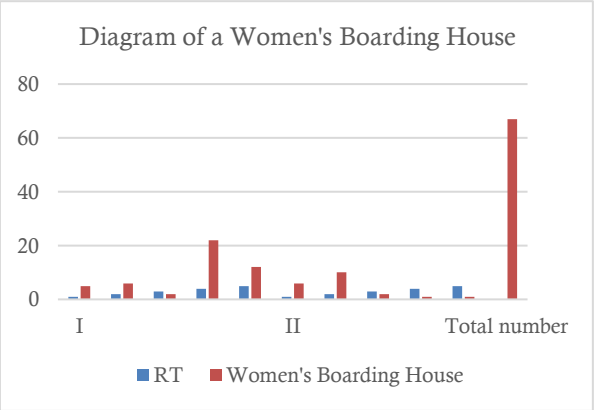


Figure 1. Diagram of a Women's Boarding House
Source: Research Data, 2025

The table presents secondary data on the number of boarding houses located in each RT (Neighborhood Association) within the study area. This data is used to provide an overview of the distribution and concentration of boarding houses in each RT, thereby helping to understand the conditions of the area and serving as a basis for analyzing the impact of boarding houses on environmental and social aspects in the study area. In addition to behavior, geographic studies and regional planning also play a significant role in understanding sanitation quality in densely populated areas. Good regional planning must consider building density, boarding house distribution patterns, drainage systems, green open spaces, and environmental accessibility.

Humans and the environment are two factors that continuously interact and influence each other. Human behavior can change the environment, for example, in the case of environmental sanitation management, (Nanda et al., 2023). Boarding houses located in narrow alleys, lacking waste collection routes, or located far from supporting environmental facilities will be more difficult to manage. Accessibility and affordability, such as the ease of access for cleaning staff to the boarding area or the availability of a nearby waste disposal station, also determine the quality of sanitation in the area. Clean living behaviors can be practiced by anyone, including students. The WHO defines a healthy home as a dwelling that provides conditions conducive to physical health, mental well-being, and a fulfilling social life for all its occupants, (Chu et al., 2022)

Gusti and Risandi's research (2021) a study at Andalas University showed that most boarding houses met healthy criteria, with 92.7% having access to clean water and proper sanitation and 94.8% of residents practicing healthy lifestyles, thus supporting student comfort and focus on learning. The difference is that the study focused on the impact of sanitation on health and learning concentration, while Erni Oktaviani's research at the University of Lampung emphasized the influence of women's boarding houses on environmental sanitation and PHBS, with a focus on resident awareness.

Research by Zahara et al (2024) research at Malikussaleh University demonstrated that students living in boarding houses are crucial for implementing and understanding PHBS (Healthy Living Environment) to maintain a healthy and comfortable living environment. The study confirmed that unsanitary boarding house conditions can impact residents' health.

Therefore, awareness, knowledge, and healthy living behaviors, supported by good sanitation, are essential for optimal quality of life and health for boarding house residents.

Accessibility is a measure of how easily a location can be reached from other locations via transportation systems, including ease of travel time, cost, and effort (Anindita et al., 2021). Factors influencing accessibility include travel time, cost, and effort required to move (Anindita et al., 2021). Thus, research on the influence of women's boarding houses on environmental sanitation and PHBS is important because it describes.

How the physical condition of buildings, waste management systems, occupant behavior, and regional planning interact to shape environmental quality. This approach provides a comprehensive understanding of the dynamics of environmental health in student residential areas and can serve as a basis for boarding house managers, village governments, and the community to improve sanitation quality and healthy lifestyles in a sustainable manner. Therefore, good environmental sanitation conditions depend on how the community acts and maintains its environmental sanitation, (Najmi et al., 2024).

Research on boarding houses generally focuses on aspects of residential comfort, environmental health, or resident behavior separately. Several studies have shown that the quality of environmental sanitation in boarding houses is influenced by occupant density, clean water availability, drainage systems, and domestic waste management. On the other hand, research on PHBS (Healthy Living Behavior) focuses more on individual behavior in maintaining personal and environmental hygiene. However, studies integrating the relationship between women's boarding houses, environmental sanitation, and PHBS in a single analytical model are still limited, particularly in student residential areas around universities.

Furthermore, previous research generally uses a descriptive approach and has not utilized Structural Equation Modeling (SEM) to examine direct and indirect relationships between variables simultaneously. In addition, PLS-SEM uses a least-squares estimation procedure and avoids many of the strict assumptions underlying covariance-based SEM techniques, such as multivariate normality and large sample sizes, (Yang et al., 2021). In the study of geography, the relationship between humans and the environment is part of the environmental geography approach that emphasizes the interaction between human activities and the quality of the residential environment.

The spatial approach is also important to use to understand the distribution patterns of boarding houses, building density, accessibility to sanitation facilities, and the affordability of environmental services in the area around the University of Lampung. Meanwhile, the complex regional approach is used to examine the relationship between educational areas, the activities of boarding house residents, and the quality of environmental sanitation that shape the community's clean and healthy living behavior. Thus, this study not only examines the health behavior of boarding house residents, but also places it in a spatial and environmental context as part of the study of residential geography.

Based on research by Gusti and Risandi (2021) and Zahara et al. (2024), studies on boarding houses generally focus on sanitation conditions, resident health, and the implementation of PHBS descriptively. However, these studies have not yet examined the direct relationship between women's boarding houses, environmental sanitation, and PHBS in a single, integrated research model. Therefore, this study presents a novelty through the analysis of the influence of women's boarding houses on environmental sanitation and its impact on PHBS using the Reflective-Reflective Higher Order Construct SEM method. Furthermore, this study also emphasizes an environmental geography approach through environmental, spatial, and regional complex aspects in student residential areas around the University of Lampung.

METHOD

The research location is in Kampung Baru Sub-district, located in Bandar Lampung, Lampung, Indonesia. The geographical location of Kampung Baru Sub-district is at coordinates 5 °21' 30" South Latitude to 5 °22' 30" South Latitude and 105 °14' 30" East Longitude to 105 °15' 00" East Longitude.

This study has obtained ethical approval from the Ethics Committee of the University of Lampung with letter/protocol number 12256/UN26.13/PN.01.00/2025 and obtained research permit from the Kampung Baru Subdistrict with letter/protocol number 474.33.VI.96.X.2025. All respondents participated voluntarily and had given their consent before data collection was carried out.

The population in this study was all residents of women's boarding houses in Kampung Baru Village. The variables measured in this study were changes in women's boarding houses, environmental sanitation, and clean and healthy living behaviors (PHBS).

This study used a quantitative approach to analyze the role of women's boarding houses on environmental sanitation and clean and healthy living behaviors (PHBS) in Kampung Baru Village.

The analytical method used was Structural Equation Modeling (SEM) based on Partial Least Squares (PLS-SEM) with the help of SmartPLS 3.0.

The SEM construct type used is the Reflective - Reflective Higher Order Construct (HOC) type. The Reflective - Reflective Higher Order Construct (HOC) type is a PLS-SEM model in which a high-level construct is formed by several first-level reflective constructs, with indicators as reflections of latent variables used to describe complex and multidimensional concepts, (Sarstedt et al., 2019).

This approach was chosen because it is able to test the relationship between latent variables simultaneously and does not require normal data distribution or large sample size. In the analysis there is a Validity Test which is divided into Convergence Validity with the Average Variance Extracted (AVE) value and Discriminant Validity with Cross Loadings value, Reliability Test with Cronbach's Alpha, Rho_A, and Composite Reliability values, Hypothesis Test with T-statistic and P-values, and the relationship between each variable, indicator and sub-indicator with R-square and F-square values.

Indicators in the study are declared valid if they have a loading factor value ≥ 0.70, while the construct is considered to meet validity if the Average Variance Extracted (AVE) value reaches ≥ 0.50. Reliability testing is carried out using Cronbach's Alpha and Composite Reliability (CR) values, where the construct is declared reliable if both values ≥ 0.70. All test results are obtained automatically through the PLS Algorithm process in the SmartPLS application. After that, the results obtained are interpreted based on the predetermined cut-off value to determine the level of validity and reliability of each indicator and construct in the research model, (Yarsasi et al., 2025).

The use of SmartPLS 3 in PLS-SEM analysis is very helpful for researchers because this software can process data quickly and display the results of validity and reliability tests, as well as the strength of the relationship between variables through R-square values and t-statistics. Cross-loading values: indicators must have a greater loading value on their own construct compared to the loading on other constructs. If one indicator has a higher cross-loading on another construct, then the indicator is not discriminantly valid and should be removed or revised, (Suryanti & Ekawati, 2023).

Hypothesis testing in SmartPLS is performed through a bootstrapping process, which produces t-statistics and p-values. A hypothesis is considered significant if the t-statistic is > 1.96 and the p-value is < 0.05. This value shows that the relationship between variables is real and not a coincidence, (Artanto et al., 2021).

The study was conducted during October–December 2025. Data were collected through observation, Likert scale questionnaires (1-5), interviews, and documentation. The study population consisted of 1,013 boarding house residents in Kampung Baru Subdistrict, with a sample of 91 respondents determined using the Slovin formula and purposive sampling technique, namely respondents aged ≥17 years and had lived in the boarding house for at least three months, and were willing to be part of the study. The sample size was calculated using the Slovin formula because the total population of women's boarding house residents was known. This formula was used to determine a representative number of respondents by considering the acceptable margin of error, (Syakrani & R, 2025).

PLS-SEM also has the advantage of testing multidimensional constructs through a Higher Order Construct approach, thus explaining the relationships between variables more comprehensively. The Reflective–Reflective Higher Order Construct approach is used because the indicators in each construct are viewed as reflections of the latent variables being measured. Furthermore, the use of SmartPLS 3.0 facilitates testing the validity, reliability, and strength of structural relationships between variables through outer loading, AVE, cross-loading, R-square, and f-square values The criteria for respondents in this study were residents of boarding houses specifically designated for women and domiciled in the Kampung Baru sub-district near the University of Lampung. Respondents were individuals who had lived in the Lampung. Furthermore, respondents were also required to be willing to be sampled in this study. The study took place from October to November 2025. boarding house for at least 3 months, were 17 years old or older (both students and workers), and lived within a radius of approximately 1 km from the University.

Research Equipment:

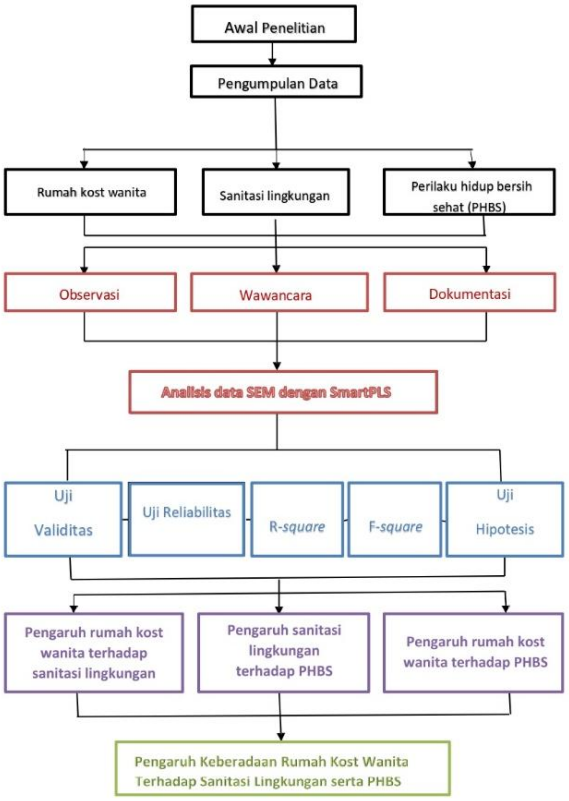


Figure 2. Research Flow
Source: Research Data, 2025

RESULTS AND DISCUSSION

Descriptive Analysis

Analysis SEM or Structural Equation Modeling, is an analysis using SmartPLS software, which inputs the variables to be analyzed along with indicators or sub-indicators for each variable. Structural Equation Modeling (SEM) analysis is a statistical method used to test relationships among variables simultaneously, thereby explaining the direct and indirect effects of one construct on another within a research model, (Baah et al., 2024). SmartPLS analysis results are considered valid if the Calculate Algorithm produces a value that meets the standard or is colored green, and black if it is close to an invalid value, which is colored red. SEM is used to analyze and test research models that involve multiple latent variables simultaneously, thereby providing a more comprehensive picture of the relationships among the variables under study, (Alkawsi et al., 2024).

Values that comply with SmartPLS standards are for Validity Test on Convergent Validity the Average Variance Extracted (AVE) value is above 0.50 and Discriminant Validity on Cross Loadings each original construct value is higher than the loading of other constructs so that there is no overlap between variables. Reliability Test namely Cronbach's Alpha, Rho_A, and Composite Reliability values must have a value of 0.70. Hypothesis Test with a T-statistic value greater than 1.96 and P-values <0.05. And for the value of each variable with an R-square value (0.75 and above = High, 0.50-0.70 = Medium, 0.25-0.50 = Low) and F-square (0.02 = Small Influence, 0.15 = Medium Influence, 0.35 = Large Influence). If the results produced by SmartPLS are green, it means they are valid/reliable, black means they are close to invalid/reliable results, red means they are not valid/reliable. The distribution of location points for women's boarding houses was taken by manual survey during observations using GPS Essential. The following is a map of the distribution of women's boarding houses in Kampung Baru:

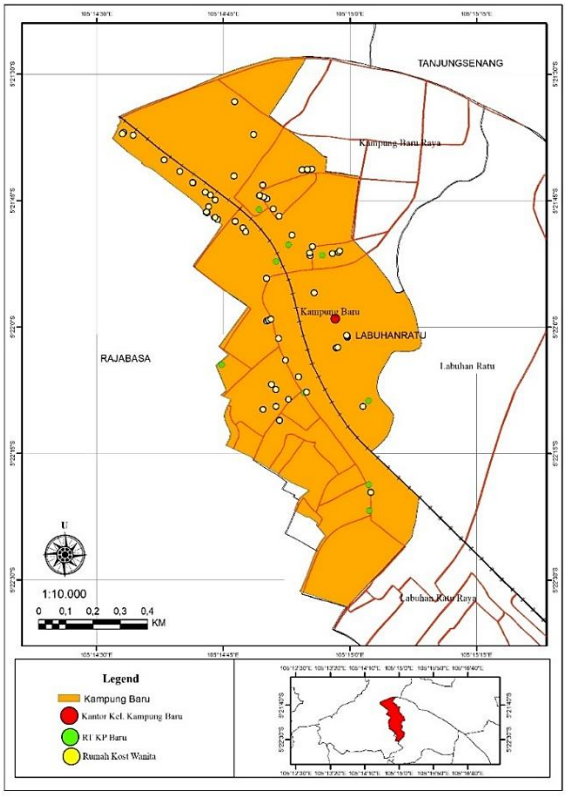


Figure 3. Research Location Map
Source: Research Data, 2025

Data Analysis Results

Outer Loadings (Calculate PLS Algorithm)

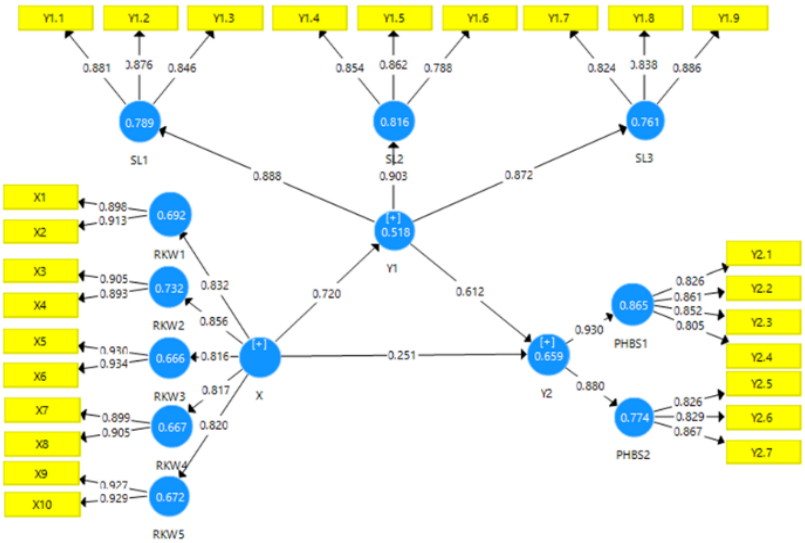


Figure 4. Calculate PLS Algorithm Path Diagram
Source: SmartPLS Data Processing Results, 2025

SEM analysis uses the Second Order Repeated Indicator approach with the R-square value indicated by the blue circle. Variable X (Women's Boarding House) is an exogenous variable measured through capacity, building condition, lighting and air, surrounding area, and boarding house facilities.

Variable Y1 (Environmental Sanitation) is influenced by the Women's Boarding House and is measured through waste management, sanitation facilities, and clean water availability. Variable Y2 (PHBS) is influenced by the Women's Boarding House and Environmental Sanitation, with indicators of individual and environmental cleanliness.

Table 4. Outer Loadings

Sub-Indicators	Indicator										Variables		
	PHBS1	PHBS2	RKW1	RKW2	RKW3	RKW4	RKW5	SL1	SL2	SL3	X	Y1	Y2
X1			0.898										
X1											0.725		
X10							0.929						
X10											0.764		
X2			0.913										
X2											0.780		
X3				0.905									
X3											0.790		
X4				0.893									
X4											0.748		
X5					0.930								
X5											0.751		
X6					0.934								
X6											0.771		
X7						0.899							
X7											0.726		
X8						0.905							
X8											0.747		
X9							0.927						
X9											0.758		
Y1.1								0.881					
Y1.1												0.762	
Y1.2								0.876					
Y1.2												0.764	
Y1.3								0.846					
Y1.3												0.786	
Y1.4									0.854				
Y1.4												0.805	
Y1.5									0.862				
Y1.5												0.750	
Y1.6									0.788				
Y1.6												0.705	
Y1.7										0.824			
Y1.7												0.737	
Y1.8										0.838			
Y1.8												0.739	
Y1.9										0.886			
Y1.9												0.747	
Y2.1	0.826												
Y2.1													0.788
Y2.2	0.861												
Y2.2													0.756
Y2.3	0.852												
Y2.3													0.788
Y2.4	0.805												
Y2.4													0.776
Y2.5		0.826											
Y2.5													0.765
Y2.6		0.829											
Y2.6													0.723
Y2.7		0.867											
Y2.7													0.729

Source: SmartPLS Data Processing Results, 2025

In the Outer Loadings data, all variables, indicators, or sub-indicators have values above >0.70, which means that the numbers in these variables meet the standards in SmartPLS and can be declared valid.

Validity Test

Convergent Validity

In the Convergent Validity Test, the AVE value used is the AVE value, the AVE value must not be <0.50 but must be >0.50 so that the data can be said to meet the validity standards in SmartPLS.

Table 5. Average Variance Extracted (AVE)

Construct	
Indicator	***Average Variance Extracted*(AVE)**
PHBS1	0.700
PHBS2	0.707
RKW1	0.820
RKW2	0.808
RKW3	0.869
RKW4	0.814
RKW5	0.861
SL1	0.753
SL2	0.698
SL3	0.722
Variables	***Average Variance Extracted*(AVE)**
X	0.527
Y1	0.571
Y2	0.579

Source: SmartPLS Data Processing Results, 2025

The Average Variance Extracted (AVE) value in this study is above the minimum limit of 0.50, thus indicating that each construct has good convergent validity. The AVE constructs on the indicators are PHBS1 with an AVE value of 0.700, PHBS2 with an AVE value of 0.707, RKW1 with an AVE value of 0.820, RKW2 with an AVE value of 0.808, RKW3 with an AVE value of 0.869, RKW4 with an AVE value of 0.814, RKW5 with an AVE value of 0.861, SL1 with an AVE value of 0.753, SL2 with an AVE value of 0.698, and SL3 with an AVE value of 0.722. The AVE constructs on the variables are X with an AVE value of 0.527, Y1 with an AVE value of 0.571, and Y2 with an AVE value of 0.579. This result means that each construct, indicator, or variable is able to explain that the indicators and variables in the research are valid and statistically acceptable, so that the research can be continued by looking at the results of the next stage in the overall model analysis process.

Discriminant Validity

In the Discriminant Validity Test, the Cross Loadings value is used to determine the discriminant validity.

Table 6. Cross Loadings

Sub-Indicators	Indicator										Variables		
	PHBS1	**PHBS2**	**RKW1**	**RKW2**	**RKW3**	**RKW4**	**RKW5**	**SL1**	**SL2**	**SL3**	**X**	**Y1**	**Y2**
X1	0.555	0.559	0.898	0.497	0.538	0.569	0.490	0.604	0.626	0.483	0.725	0.644	0.613
X1	0.555	0.559	0.898	0.497	0.538	0.569	0.490	0.604	0.626	0.483	0.725	0.644	0.613
X10	0.427	0.466	0.585	0.601	0.484	0.560	0.929	0.539	0.508	0.436	0.764	0.557	0.489
X10	0.427	0.466	0.585	0.601	0.484	0.560	0.929	0.539	0.508	0.436	0.764	0.557	0.489
X2	0.560	0.498	0.913	0.623	0.527	0.522	0.641	0.483	0.544	0.478	0.780	0.565	0.588
X2	0.560	0.498	0.913	0.623	0.527	0.522	0.641	0.483	0.544	0.478	0.780	0.565	0.588
X3	0.435	0.422	0.579	0.905	0.615	0.590	0.589	0.422	0.511	0.461	0.790	0.523	0.473
X3	0.435	0.422	0.579	0.905	0.615	0.590	0.589	0.422	0.511	0.461	0.790	0.523	0.473
X4	0.475	0.496	0.537	0.893	0.609	0.535	0.523	0.456	0.434	0.441	0.748	0.500	0.533
X4	0.475	0.496	0.537	0.893	0.609	0.535	0.523	0.456	0.434	0.441	0.748	0.500	0.533
X5	0.339	0.495	0.598	0.646	0.930	0.462	0.468	0.521	0.455	0.417	0.751	0.524	0.449
X5	0.339	0.495	0.598	0.646	0.930	0.462	0.468	0.521	0.455	0.417	0.751	0.524	0.449
X6	0.360	0.456	0.499	0.623	0.934	0.589	0.549	0.501	0.484	0.349	0.771	0.502	0.442
X6	0.360	0.456	0.499	0.623	0.934	0.589	0.549	0.501	0.484	0.349	0.771	0.502	0.442
X7	0.438	0.509	0.548	0.543	0.502	0.899	0.523	0.436	0.564	0.467	0.726	0.550	0.516
X7	0.438	0.509	0.548	0.543	0.502	0.899	0.523	0.436	0.564	0.467	0.726	0.550	0.516
X8	0.547	0.513	0.538	0.586	0.518	0.905	0.554	0.499	0.549	0.475	0.747	0.572	0.586
X8	0.547	0.513	0.538	0.586	0.518	0.905	0.554	0.499	0.549	0.475	0.747	0.572	0.586
X9	0.485	0.490	0.580	0.548	0.529	0.547	0.927	0.443	0.470	0.432	0.758	0.505	0.537
X9	0.485	0.490	0.580	0.548	0.529	0.547	0.927	0.443	0.470	0.432	0.758	0.505	0.537
Y1.1	0.457	0.552	0.494	0.421	0.537	0.406	0.480	0.881	0.603	0.537	0.566	0.762	0.549
Y1.1	0.457	0.552	0.494	0.421	0.537	0.406	0.480	0.881	0.603	0.537	0.566	0.762	0.549
Y1.2	0.456	0.544	0.532	0.459	0.470	0.497	0.436	0.876	0.633	0.517	0.579	0.764	0.545
Y1.2	0.456	0.544	0.532	0.459	0.470	0.497	0.436	0.876	0.633	0.517	0.579	0.764	0.545
Y1.3	0.582	0.578	0.529	0.389	0.421	0.446	0.461	0.846	0.630	0.611	0.544	0.786	0.639
Y1.3	0.582	0.578	0.529	0.389	0.421	0.446	0.461	0.846	0.630	0.611	0.544	0.786	0.639
Y1.4	0.597	0.544	0.593	0.423	0.500	0.546	0.469	0.701	0.854	0.590	0.612	0.805	0.632
Y1.4	0.597	0.544	0.593	0.423	0.500	0.546	0.469	0.701	0.854	0.590	0.612	0.805	0.632
Y1.5	0.531	0.548	0.555	0.486	0.403	0.496	0.462	0.564	0.862	0.575	0.580	0.750	0.593
Y1.5	0.531	0.548	0.555	0.486	0.403	0.496	0.462	0.564	0.862	0.575	0.580	0.750	0.593
Y1.6	0.523	0.573	0.461	0.412	0.351	0.503	0.386	0.522	0.788	0.568	0.510	0.705	0.600
Y1.6	0.523	0.573	0.461	0.412	0.351	0.503	0.386	0.522	0.788	0.568	0.510	0.705	0.600
Y1.7	0.524	0.610	0.515	0.446	0.420	0.411	0.459	0.513	0.633	0.824	0.544	0.737	0.619
Y1.7	0.524	0.610	0.515	0.446	0.420	0.411	0.459	0.513	0.633	0.824	0.544	0.737	0.619
Y1.8	0.501	0.572	0.408	0.406	0.306	0.441	0.375	0.567	0.572	0.838	0.468	0.739	0.586
Y1.8	0.501	0.572	0.408	0.406	0.306	0.441	0.375	0.567	0.572	0.838	0.468	0.739	0.586
Y1.9	0.507	0.646	0.429	0.427	0.321	0.478	0.358	0.553	0.558	0.886	0.486	0.747	0.625
Y1.9	0.507	0.646	0.429	0.427	0.321	0.478	0.358	0.553	0.558	0.886	0.486	0.747	0.625
Y2.1	0.826	0.573	0.527	0.430	0.322	0.469	0.382	0.473	0.536	0.578	0.514	0.595	0.788
Y2.1	0.826	0.573	0.527	0.430	0.322	0.469	0.382	0.473	0.536	0.578	0.514	0.595	0.788
Y2.2	0.861	0.463	0.453	0.504	0.361	0.445	0.432	0.424	0.515	0.450	0.530	0.521	0.756
Y2.2	0.861	0.463	0.453	0.504	0.361	0.445	0.432	0.424	0.515	0.450	0.530	0.521	0.756
Y2.3	0.852	0.541	0.523	0.390	0.307	0.451	0.355	0.493	0.566	0.473	0.490	0.575	0.788
Y2.3	0.852	0.541	0.523	0.390	0.307	0.451	0.355	0.493	0.566	0.473	0.490	0.575	0.788
Y2.4	0.805	0.571	0.555	0.370	0.266	0.463	0.476	0.533	0.590	0.507	0.515	0.612	0.776
Y2.4	0.805	0.571	0.555	0.370	0.266	0.463	0.476	0.533	0.590	0.507	0.515	0.612	0.776
Y2.5	0.594	0.826	0.519	0.452	0.422	0.554	0.442	0.535	0.579	0.580	0.577	0.635	0.765
Y2.5	0.594	0.826	0.519	0.452	0.422	0.554	0.442	0.535	0.579	0.580	0.577	0.635	0.765
Y2.6	0.522	0.829	0.472	0.447	0.438	0.474	0.462	0.522	0.521	0.599	0.554	0.616	0.723
Y2.6	0.522	0.829	0.472	0.447	0.438	0.474	0.462	0.522	0.521	0.599	0.554	0.616	0.723
Y2.7	0.502	0.867	0.477	0.383	0.427	0.397	0.394	0.565	0.570	0.629	0.503	0.662	0.729
Y2.7	0.502	0.867	0.477	0.383	0.427	0.397	0.394	0.565	0.570	0.629	0.503	0.662	0.729

Source: SmartPLS Data Processing Results, 2025

In the table we can see that each variable, indicator or sub-indicator has a large value compared to the variable constructed with the variable itself, such as the value of variable X in constructed with X1 where X1 is a sub-indicator of variable X, then it can be seen in the table the value of X with X1 is 0.725 which is the largest value compared to the value of variable Y1 with X1 which is only 0.644. And so on to determine if the construct of the variable itself is greater than the construct of other variables or indicators.

Reliability Test

The reliability test can be directly seen from the results of Construct Reliability and Validity in SmartPLS, namely:

Table 7. Reliability Construct

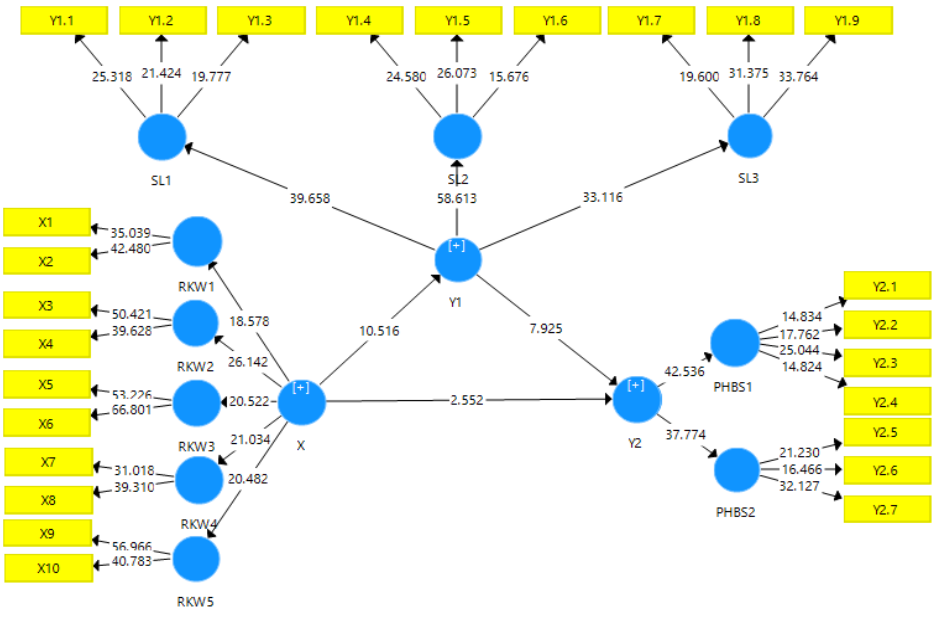
Indicator	*Cronbach's Alpha*	*rho_A*	*Composite Reliability*
PHBS1	0.856	0.857	0.903
PHBS2	0.792	0.793	0.879
RKW1	0.780	0.783	0.901
RKW2	0.763	0.765	0.894
RKW3	0.849	0.849	0.930
RKW4	0.772	0.772	0.898
RKW5	0.839	0.839	0.925
SL1	0.836	0.836	0.901
SL2	0.783	0.788	0.874
SL3	0.807	0.807	0.886
Variables	*Cronbach's Alpha*	*rho_A*	*Composite Reliability*
X	0.917	0.917	0.930
Y1	0.906	0.907	0.923
Y2	0.879	0.879	0.906

Source: SmartPLS Data Processing Results, 2025

The values generated to calculate whether the reliability test has passed are seen from the Cronbach's Alpha, rho_A, and Composite Reliability values. If all the variable and indicator results have a value >0.70 and are green in the SmartPLS results table, then the variables and indicators have passed the reliability test.

Hypothesis Testing (Bootstrapping)

In addition to testing the direct effects between variables, this study also conducted a mediation analysis as part of the hypothesis testing (inner model) in SEM-PLS. The mediation analysis was used to determine whether the Environmental Sanitation variable acts as a mediator in the relationship between Women's Boarding Houses and PHBS. The mediation test was carried out through an indirect effect analysis using the bootstrapping procedure in SmartPLS. A mediation effect was deemed significant if the t-statistic value was > 1.96 and the p-value was < 0.05. Thus, the hypothesis testing in this study covered both direct and indirect effects between variables. In the hypothesis test, we examine the bootstrapping results in the t-statistic (generally 1.96 for a 5% or 0.05 significance level) and the p-value (with a value less than 0.05). We can see the following:



Source: SmartPLS Data Processing Results, 2025

Figure 5. Bootstrapping Path Diagram

This image shows the bootstrapping results for the R-square and T-statistic in SmartPLS to determine the results of hypothesis testing in research. These results relate to the influence of one variable on another variable and its indicators.

Table 8. *Mean, STDEV, T-Values, P-Values*

Variable X - Indicator	*Original Sample (O)*	*Sample Mean (M)*	*Standard Deviation (STDEV)*	*T Statistics (O/STDEV)*	*P Values*
X->RKW1	0.832	0.830	0.045	18,578	0,000
X->RKW2	0.856	0.855	0.033	26,142	0,000
X->RKW3	0.816	0.816	0.040	20,522	0,000
X->RKW4	0.817	0.818	0.039	21,034	0,000
X->RKW5	0.820	0.821	0.040	20,482	0,000
Variable Y1 - Indicator	***Original Sample (O)***	***Sample Mean (M)***	***Standard Deviation (STDEV)***	***T Statistics (O/STDEV)***	***P Values***
Y1->SL1	0.888	0.890	0.022	39,658	0,000
Y1->SL2	0.903	0.905	0.015	58,613	0,000
Y1->SL3	0.872	0.874	0.026	33,116	0,000
Variable Y2 - Indicator	***Original Sample (O)***	***Sample Mean (M)***	***Standard Deviation (STDEV)***	***T Statistics (O/STDEV)***	***P Values***
Y2->PHBS1	0.930	0.927	0.022	42,536	0,000
Y2->PHBS2	0.880	0.880	0.023	37,774	0,000
Variables	***Original Sample (O)***	***Sample Mean (M)***	***Standard Deviation (STDEV)***	***T Statistics (O/STDEV)***	***P Values***
X->Y1	0.720	0.720	0.068	10,516	0,000
X->Y2	0.251	0.244	0.098	2,552	0.011
Y1->Y2	0.612	0.615	0.077	7,925	0,000

Source: SmartPLS Data Processing Results, 2025

The table shows that the t-statistic is very good because it is above 1.96 because the hypothesis used is a two-tailed hypothesis. And the P-Value value is at 0.000 and only in the XY2 section the P-Value value is 0.011 but still below 0.05 and in SmartPLS it is still marked in green which means that the value can still be said to meet the hypothesis test. This t-statistic value is also interrelated with the p-value. If the t-statistic is greater than 1.96 then the p-value will be less than 0.05, so both can meet a hypothesis if both have good values with each other.

R-square

Table 9.R-square

Indicator	*R Square*	*R Square Adjusted*
PHBS1	0.865	0.863
PHBS2	0.774	0.771
RKW1	0.692	0.689
RKW2	0.732	0.729
RKW3	0.666	0.663
RKW4	0.667	0.663
RKW5	0.672	0.668
SL1	0.789	0.787
SL2	0.816	0.814
SL3	0.761	0.758
Variables	***R Square***	***R Square Adjusted***
Y1	0.518	0.513
Y2	0.659	0.651

Source: SmartPLS Data Processing Results, 2025

R-Square (R^2) is used to see how much the latent variable is able to explain the dependent variable, where values above 0.75 are categorized as high, 0.50–0.75 moderate, and 0.25–0.50 low. Based on the results of the study, indicators in the Women's Boarding House (X) variable such as RKW1 (0.692), RKW2 (0.732), RKW3 (0.666), RKW4 (0.667), and RKW5 (0.672) are all included in the moderate category.

In the Environmental Sanitation variable (Y1), all indicators namely SL1 (0.789), SL2 (0.816), and SL3 (0.761) are in the high category.

The PHBS indicator (Y2) also shows a high category with a PHBS1 value of 0.865 and PHBS2 of 0.774. For the variable construct, the influence of the Women's Boarding House on Environmental Sanitation produces an R-square of 0.518 which is included in the moderate category, while the combined influence of the Women's Boarding House and Environmental Sanitation on PHBS has a value of 0.659 which is also in the moderate category, so that the model is able to explain the relationship between variables quite strongly.

F-square

Table 10.F-square

Variables	PHBS1	PHBS2	RKW1	RKW2	RKW3	RKW4	RKW5	SL1	SL2	SL3	X	Y1	Y2
X			2,2505	2,7393	1,9903	2,0042	2,0497					1,0078	0,0289
Y1								3,7474	4,4471	3,1718			0,5228
Y2	6,3959	3,4251											

Source: SmartPLS Data Processing Results, 2025

The f-square test is used to see how much a variable contributes to another variable in the PLS-SEM model, so that it can be determined whether the influence is classified as small, medium, or large. Based on the results of the study, the influence of Women's Boarding Houses on Environmental Sanitation has an f-square value of 1.077 which is categorized as a large influence, indicating that the condition and management of women's boarding houses have a very strong impact on the quality of sanitation in their environment. Meanwhile, the influence of Women's Boarding Houses on PHBS produces an f-square value of 0.089 which is categorized as a small influence, so even though women's boarding houses still influence clean and healthy living behavior, the contribution is not too large. On the other hand, Environmental Sanitation has a significant influence on PHBS with an f-square value of 0.528 which is categorized as a large influence, indicating that the better the environmental sanitation, the higher the tendency of residents to adopt clean and healthy living behaviors.

These results indicate that sanitation is the most dominant factor in shaping the health behavior of boarding house residents.

Discussion

The results of the study indicate that the Women's Boarding House has a very significant and strong influence on Environmental Sanitation in Kampung Baru Subdistrict with a t-statistic value of 10.516, p-values of 0.000, R-square 0.518, and f-square 1.077. These findings indicate that the physical condition of the Boarding house size, occupant density, and domestic activities such as washing, bathing, and cooking affect the quality of environmental sanitation. High occupant activity increases waste and garbage production, so sanitation conditions are highly dependent on the availability of clean water, waste management, and waste disposal systems provided by boarding house managers. This finding aligns with environmental geography theory, which explains the reciprocal relationship between humans and the environment. It also aligns with research by Sekarningrum et al. (2023)., Gusti and Risandi (2021), which states that densely populated residential areas with inadequate sanitation facilities can impact the quality of residents' environmental health.

Environmental sanitation is also proven to be the most dominant factor in shaping the PHBS of boarding house residents with a t-statistic value of 7.925, p-values of 0.000, and f-square of 0.528. The PHBS R-square value of 0.659 indicates that the clean and healthy living behavior of residents is greatly influenced by the quality of environmental sanitation and the overall condition of the women's boarding house. This shows that clean and healthy living behavior is not only influenced by individual awareness, but also the condition of the living environment. Boarding house residents with good sanitation facilities tend to maintain better personal and environmental hygiene. This finding supports the research of Tanjung et al. (2023) which explains that environmental quality plays an important role in the formation of PHBS of students.

On the other hand, the Women's Boarding House also has a direct influence on PHBS with a t-statistic value of 2.552, p-values of 0.011, and f-square of 0.089 so it is included in the category of small but still significant influence. This shows that hygiene rules, bathing and washing facilities, and the culture of living together in the boarding house still contribute to forming PHBS residents, although this influence will not be optimal without the support of good environmental sanitation.

In a geographical context, this study shows the relationship between environmental, spatial, and regional complex approaches through the relationship between boarding house residents' activities, residential density around the University of Lampung, and environmental sanitation quality. However, field conditions still show limitations in sanitation facilities and environmental management so that there is a gap between ideal sanitation standards and actual conditions in the boarding house area.

Environmental sanitation had an effect on PHBS of 0.528, which falls into the "significant" category, while the direct effect of women's boarding houses on PHBS was only 0.089, which falls into the "minor" category. This can be explained by the fact that PHBS refers to behaviors directly related to daily hygiene and health practices, and is therefore more heavily influenced by the availability of clean water, waste management, bathroom conditions, drainage systems, and the cleanliness of the surrounding environment. When sanitation facilities are available and well-managed, boarding house residents will find it easier to adopt clean and healthy living behaviors. Conversely, even if a boarding house is in good physical condition, the implementation of PHBS may not be optimal if it is not supported by adequate environmental sanitation. Therefore, environmental sanitation is a factor that more closely and directly influences residents' health behaviors compared to the general characteristics of the boarding house itself. The limited direct influence of women's boarding houses on PHBS also indicates that boarding house characteristics such as occupancy capacity, building condition, ventilation, lighting, and facilities play a greater role in shaping the quality of environmental sanitation before ultimately influencing residents' clean and healthy living behaviors.

In other words, residents do not automatically adopt healthy living behaviors simply because they live in a boarding house in good physical condition, but because the living environment provides sanitary conditions that support healthy behaviors. These findings indicate that environmental sanitation serves as a key mechanism that bridges the influence of women's boarding houses on healthy living behaviors, making improvements in sanitation quality a primary factor in fostering clean and healthy living behaviors among boarding house residents.

The results of this study are consistent with the research by Ejigu and Yeshitela (2024), which found that individuals' behaviors, attitudes, and perceptions toward sanitation are key factors in supporting the implementation of sustainable sanitation.

That study showed that positive attitudes and good behavioral control influence people's intentions to adopt healthier sanitation systems. These findings support the results of this study, which indicate that the presence of women's boarding houses is associated with environmental sanitation conditions and healthy lifestyle practices. This suggests that the quality of environmental sanitation is influenced not only by the availability of physical facilities but also by residents' behaviors in maintaining the cleanliness and health of their living environment.

The findings of this study are also consistent with the research by Nastiti et al. (2025), which shows that community sanitation behavior is influenced by contextual and psychosocial factors, such as access to health information, social support, and habits of clean living in the residential environment. In this study, women's boarding houses can serve as a social environment that shapes residents' habits in practicing healthy living behaviors. Interactions among residents and access to health information enable the development of clean and healthy living behaviors, which ultimately contribute to improving the quality of environmental sanitation in the areas surrounding the boarding houses.

The results of this study are consistent with those of Anthonj et al. (2025), who emphasize the importance of spatial aspects in understanding sanitation issues and access to WASH (Water, Sanitation, and Hygiene) facilities. The study shows that location characteristics, accessibility, and surrounding environmental conditions influence the quality of community sanitation. These findings support research indicating that women's boarding houses, as part of the residential environment, influence environmental sanitation and healthy lifestyle practices. From a geographical perspective, boarding houses are part of the residential space that interacts with physical and social environmental conditions, thereby influencing health behaviors and the quality of environmental sanitation.

The results of this study are consistent with those of Kołodyńska et al. (2025), which show that residential environmental characteristics influence people's quality of life, health, and well-being. That study found that the social quality of the environment, access to green spaces, and the condition of the surrounding environment have a positive relationship with residents' health and well-being.

From a geographical perspective, these findings indicate that residential space is not merely a physical location but also an environment that shapes social interactions and community behavior. This aligns with the results of this study, which show that women's boarding houses as part of the residential environment in Kampung Baru Subdistrict influence environmental sanitation and healthy living practices. Housing conditions, population density, and the quality of the environment surrounding boarding houses can influence residents' behavior in maintaining environmental cleanliness and health. Thus, both studies confirm that the geographical characteristics of a residential area play a crucial role in shaping environmental quality and public health.

The findings of this study are consistent with Matthews et al. (2024), who assert that the quality of the living environment influences human health. That study explains that a well-designed and well-managed physical environment can support public health by fostering healthier environmental conditions. The results of this study indicate that women's boarding houses, as part of the residential environment, are linked to environmental sanitation conditions and healthy lifestyle practices. Thus, the better the management of sanitation and hygiene in the boarding house environment, the greater its contribution to creating a healthy environment for both residents and the surrounding community.

The results of this study also support the findings of Sabo et al. (2024), who state that the environment is one of the primary determinants of public health. That study explains that the quality of both the natural and built environments including sanitation, water quality, and residential environmental conditions affects the physical, mental, and social health of the community. In line with this, this study found that the presence of women's boarding houses is associated with environmental sanitation conditions and healthy living behaviors. These findings suggest that managing boarding houses with a focus on sanitation and healthy living behaviors can support the creation of a healthy environment, thereby positively impacting the health of the surrounding community.

The results of this study are also consistent with Shrikhande et al. (2024), who emphasize that sanitation, hygiene, and good environmental management are important factors in improving public health. The study shows that improvements in sanitation and good hygiene practices can reduce various health risks originating from the environment.

These findings support the research results indicating that the conditions of women's boarding houses are linked to environmental sanitation and healthy lifestyle practices. The better the sanitation and hygiene practices implemented by the residents, the better the resulting environmental quality, thereby supporting the creation of a healthy environment.

The results of this study are consistent with those of Lutfi et al. (2024), who found that good environmental management contributes to improved environmental quality. Although that study was conducted in a different context namely, the industrial sector the principles derived from it remain relevant to this study. In boarding house settings, maintaining cleanliness, proper use of sanitation facilities, and residents' concern for the environment can create better sanitary conditions. Thus, both studies demonstrate that environmental quality is significantly influenced by how the environment is managed and maintained.

The results of this study are consistent with those of He et al. (2024), who emphasize the importance of environmental aspects in achieving sustainable development and management of an area. The study indicates that environmental factors are one of the key components that must be considered in the management of an area to ensure it continues to benefit the community. These findings support the conclusion that boarding houses, as part of the residential environment, require proper sanitation management to maintain environmental quality and the health of their residents. Therefore, the better the environmental management of boarding houses, the greater the likelihood of creating a healthy and sustainable environment.

The results of this study are consistent with Malsch et al. (2024), who state that health is influenced by the interaction between the built environment, the sociocultural environment, and the psychosocial environment. The findings of this study indicate that women's boarding houses, as part of the built environment, influence environmental sanitation and healthy lifestyle practices. Therefore, the better the environmental conditions and the residents' behavior, the better the resulting health and environmental sanitation.

The results of this study are consistent with those of Colombo et al. (2023), who found that residential environmental characteristics and built environment conditions influence access to sanitation and the risk of public health problems.

That study showed that the location of sanitation facilities, safety of access, and residential environment conditions can affect sanitation quality and residents' health. These findings support the results of this study, which indicate that women's boarding houses as part of the residential environment have an impact on environmental sanitation and healthy living practices. The better the residential environment conditions and available sanitation facilities, the better the resulting environmental sanitation quality.

The results of this study are consistent with those of Daniel et al. (2023), who emphasize that access to adequate sanitation and community participation are key factors in creating a healthy environment. The study shows that the successful implementation of sanitation depends not only on the availability of facilities but also on individuals' involvement in using and maintaining them. These findings support the conclusion that women's boarding houses influence healthy lifestyle practices and environmental sanitation, as residents' behavior plays a crucial role in maintaining the quality of their living environment.

CONCLUSION

Based on the results of the study, it can be concluded that Women's Boarding Houses have a significant effect on Environmental Sanitation in Kampung Baru Village, as indicated by a path coefficient of 0.720, t-statistic of 10.516, p-value of 0.000, and f-square of 1.077, indicating a strong effect. Environmental Sanitation also has a significant influence on Clean and Healthy Living Behavior (PHBS), with a path coefficient of 0.612, t-statistic of 7.925, p-value of 0.000, and f-square of 0.528, demonstrating that sanitation is the most dominant factor affecting residents' healthy living behavior. Meanwhile, Women's Boarding Houses have a direct effect on PHBS with a path coefficient of 0.251, t-statistic of 2.552, p-value of 0.011, and f-square of 0.089, indicating a significant but relatively small effect. The R-square values of 0.518 for Environmental Sanitation and 0.659 for PHBS indicate that the model has moderate explanatory power in explaining the relationships among the variables. These findings suggest that the physical condition of boarding houses, the availability of clean water, waste management systems, and the cleanliness of facilities are important determinants of environmental sanitation quality. Furthermore, although boarding house characteristics contribute to shaping healthy behaviors through rules, facilities, and a communal living culture, environmental sanitation remains the primary factor influencing PHBS among residents.

Therefore, improving sanitation quality through better boarding house management should become a priority strategy for boarding house owners and local governments to promote healthier living behaviors and create a healthier residential environment.

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